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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,076	02/09/2005	Erwin Rinaldo Meinders	NL 020780	4189

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EXAMINER	
NGUYEN, LINH THI	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 11/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/524,076	MEINDERS ET AL.	
	Examiner	Art Unit	
	Linh T. Nguyen	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) *2 and 9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 10-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 4-7, 10, 13-15, 17-19, and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Takada et al (US Patent number 5848043).

In regards to claims 4 and 7, Takada et al discloses a method of recording marks representing data in an information layer of a record carrier (Column 4, lines 57-61) the method comprising the acts of: irradiating the information layer, and writing a mark by a sequence of one or more write pulses (Fig. 3), said information layer having a phase reversibly changeable between a crystalline phase and an amorphous phase (Column 5, lines 20-26); and irradiating the information layer in between the sequences of one or more write pulses (Fig. 5B, shows an erase power between the first second, third, and fourth pulses) by a radiation beam having an erase power level (Fig. 5B), the erase power level being higher than the first write power level (Fig. 5B, the erase power is higher then the Pb part of the second write pulse) in a first portion of a write pulse of the one or more write pulses and being lower than an n-th write power level (Pe or Pw) in a last portion of the write pulse (Fig. 5B).

In regards to claims 5 and 10 Takada et al discloses a method of recording marks representing data in an information layer of a record carrier the method comprising the acts of: irradiating the information layer, and writing a mark by a sequence of one or more write pulses (Fig. 5B), said information layer having a phase reversibility changeable between a crystalline phase and an amorphous phase (Column 5, lines 20-26), wherein at least one of the write pulses in said sequence of one or more write pulses comprises a front portion having a write power level which is a function of time (Fig. 5A and 5B), and wherein said write power level continuously increases (Fig. 5B, the write power increases from Pb to Pe to Pw).

In regards to claim 6, Takada et al discloses the method as claimed in claim 5, wherein the at least one of said at least one of the write pulses in said sequence of one or more write pulses also comprises a rear portion having a constant write power level (Fig. 5B, rear has a constant Pw power), said constant write power level being higher than or equal to the highest write power level in the front portion (Fig. 5B, Pw is higher than Pb and Pe).

In regards to claims 13, 17 and 21, Takada et al discloses a method and apparatus of recording a mark on a record carrier comprising the act of irradiating the record carrier with a sequence of pulses for writing the mark, wherein the sequence of pulses includes at least one of the continuously increasing pulse having an end portion

with a constant level and a combination of a block-shaped pulse and a staircase-shaped pulse (Fig. 5B).

In regards to claims 14, 18 and 22, Takada et al discloses a method and apparatus, wherein the staircase-shaped pulse includes a last portion having a larger duration than a previous portion (Fig. 5B).

In regards to claims 15, 19 and 23, Takada et al discloses a method and apparatus, wherein the staircase-shaped pulse includes a last portion having twice a duration of a previous portion and twice a level of the previous portion (Fig. 5B).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada et al (Patent Number 5848043) in view of Masaki et al (6526014).

In regards to claims 1 and 8, Takada et al discloses a method and apparatus of recording marks representing data in an information layer of a record carrier (Column 4,

lines 57-61) the method comprising the acts of: irradiating the information layer, and writing a mark by a sequence of one or more write pulses (Fig. 3), said information layer having a phase reversibly changeable between a crystalline phase and an amorphous phase (Column 5, lines 20-26), wherein at least one of the write pulses in said sequence of two or more write pulses other than the first write pulse (Fig. 5B; the first pulse has an arrow pointing Pw and then a sequence of write pulses follow) have a constant power level (Fig. 5B, the first pulse is constant). However, Takada et al does not disclose a sequence consists of multiple, i.e. n, portions after the first pulse, n being an integer number larger than 1, the i-th portion having an i-th write power level, i being an integer number in the range between 1 and n, the i-th portion preceding the (i+1)-th portion, and in that the i-th write power level is lower than the (i+1)-th write power level. In the same field of endeavor, Masaki et al discloses a sequence consists of multiple, i.e. n, portions (Fig. 4H), n being an integer number larger than 1 (Fig. 4H), the i-th portion (power level of 11.5 to 13) having an i-th write power level (Fig. 4H), i being an integer number in the range between 1 and n (Fig. 4H), the i-th portion preceding the (i+1)-th portion, and wherein the i-th write power level is lower than the (i+1)-th write power level (Fig. 4H, i-th = WP1 is 12 and (i+1)-th = WP2 is 13). At the time of the invention it would have been obvious to person of ordinary skill in the art to modify the method of recording marks by a sequence of one or more write pulses of Takada et al with a sequence of pulses to n portion of write power as Masaki et al suggested. The motivation for doing so would have been to record/reproduce at a fast speed onto a high-density optical disk.

In regards to claim 3, Takada et al discloses the method, wherein at least one of the write pulses in said sequence of two or more write pulses (Fig. 5B) are substantially the same duration (Fig. 5B, shows that the second, third, and forth write pulses has the same duration for a 4T recording mark). However, Takada et al does not but Masaki et al discloses a pulse of n portions (Fig. 4H; AP, WP1, and WP2 power). The motivation is the same as claim 1 above.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada et al in view of Sasaki et al (US Publication 20020021642).

In regards to claims 11 and 12, Takada et al discloses the method and apparatus wherein said write power level continuously increase (Fig. 5B, increases from Pb, Pe to Pw). However, Takada does not disclose a write power having at least one of linearly and a higher-order function including a parabolic function or an exponential function. In the same field of endeavor, Sasaki et al discloses a write power having a linearly exponential function (Fig. 14 and Paragraph [0066]; having a relationship L1 to Lm pulse widths and ΔP1 to ΔPm stack portions). At the time of the invention it would have been obvious to person of ordinary skill in the art to combine Takada et al method of write power continuously increasing to create an exponential function as Sasaki et al suggested. The motivation for doing so would have been to control the power level while recording/reproducing in high-speed optical disk.

Claims 16, 20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada et al in view of Toda et al (US Publication 20020191511).

In regards to claims 16, 20 and 24, Takada et al discloses everything claimed in claim 13. However, Takada et al does not disclose a method and apparatus, wherein a first pulse of the sequence of pulses has a first part at a beginning of the first pulse with a write power level which is at least one above and below an erase power level used in between sequences of the pulses for erasing a previously recorded mark.

In the same field of endeavor, Toda et al discloses the method, wherein a first pulse of the sequence of pulses (Fig. 3A) has a first part at a beginning of the first pulse with a write power level which is at least one above (Fig. 3A Pw1) and below an erase power level (Fig. 3A, Pr) used in between sequences of the pulses for erasing (Pe) a previously recorded mark (Fig. 3A). At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine the sequences of write pulses of Takada et al to have the first pulse power level at least one above and below the erase power as Toda et al suggested. The motivation for doing so would have been to record/reproduce on a high density optical disk with high precision recording mark while increasing the speed (Paragraph [0005] and [0006]).

Response to Arguments

Applicant's arguments with respect to claims 1, 4, and 8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh T. Nguyen whose telephone number is 571-272-5513. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A. Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LN
November 2, 2006

THANG V. TRAN
PRIMARY EXAMINER